

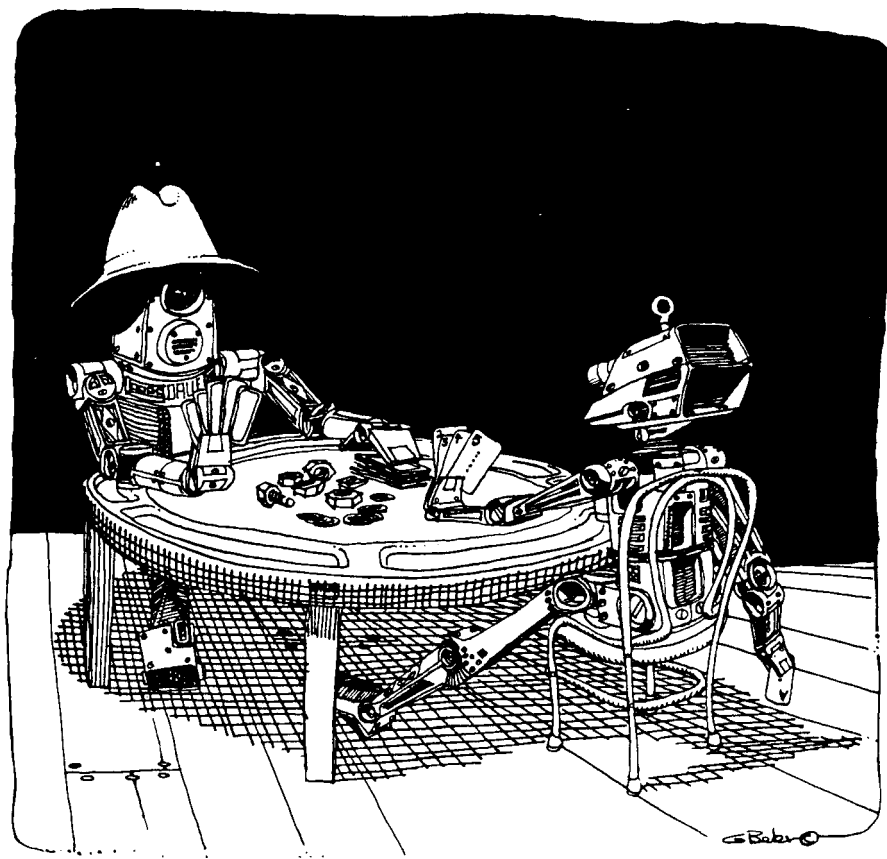


Atari Computer Enthusiasts (N.S.W.)

INSIDE INFO

No. 9

October 1983



ELECTRONIC POKER

PLUS:

FILES AND SORTS

GRAPHICS DEMOS

STRETCH YOUR DISPLAY

CREATE

TEXT WINDOW TUTORIAL

REVIEWS

AND MUCH MORE

Atari Computer Enthusiasts (N.S.W.)

Atari Computer Enthusiasts (N.S.W.) is an independent, non-profit computer users' group loosely affiliated with Atari Computer Enthusiasts in the U.S.A. We have no connections with ATARI, Inc. or their Australian distributors, Futuretronics Australia Pty Ltd. Our aims include promotion of the ATARI 400/800 Home Computer System, instructing both beginners and advanced users in programming techniques, exchanging hints, tips and ideas amongst members and generally enjoying ourselves.

Meetings are held at 6.0 P.M. on the first Monday of every month (or the second Monday if it clashes with a public holiday) in the Lecture Room above Computer Wave, 325 George Street, Sydney. Visitors welcome.

Membership to A.C.E.(N.S.W.) is \$30 for the first year and \$15 per year thereafter (or \$20 and \$10 respectively for students under 18 and still at school). Subscriptions, postal enquiries and all correspondence should be directed to:

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* * *

Meeting Dates

*10th October (due to 8-Hour Day Public Holiday)

7th November

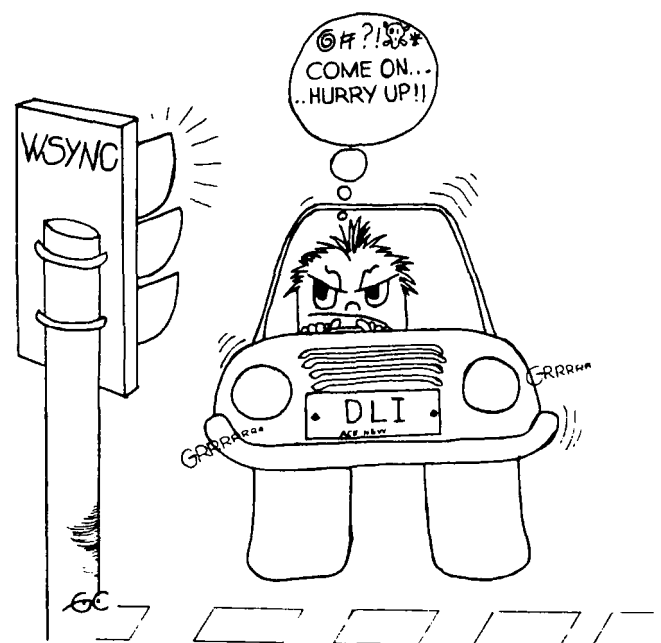
*5th December

* indicates release dates for INSIDE INFO (subject to unforeseen circumstances). Deadline for articles is the meeting prior to the release date.

* * *



"Now, who are you going to believe ... a forty year old mathematician or a two year old computer?"



Editorial

You can always tell a beginner from an expert. A beginner is always whingeing about bugs in program listings from magazines. He will swear blind that he has checked his typing ten times and there are no typos. On the other hand, an expert is happily using the same programs without any trouble. Strange isn't it?

The following extract is from a member's letter. Would you say he is a beginner or an expert?

"I don't know whether it is deliberate or not, but my copy of Catalogue from the August '83 issue of INSIDE INFO has lots of bugs. This certainly makes one try to understand what is going on, but as a 'tyro' I can only wonder if my lack of knowledge may also be undermined by malfunction."

If I had a dollar for every time somebody told me that a program out of a magazine was full of bugs (when in fact it wasn't), I'd be able to buy a new computer! To make matters worse, can you imagine how I feel after months of thankless toil to have someone accuse me of sabotage?

Every program out of INSIDE INFO is extensively tried and tested and the actual working program is used for the listing that appears in the magazine. Referring back to Catalogue, Peter Bamford had been using it for about 4 months before he submitted it. I have used it and at least one other member has used it. There is a minor annoyance on one screen where a message to "Press START for Menu" shouldn't be there, but apart from that, there are no bugs!

I make no claims to perfection, but I'm proud to say that I haven't yet printed a program in INSIDE INFO that didn't work! And it's rare that commercial magazines have bugs in their programs either. If your program doesn't work, then like it or not, you've got some typing errors. It's your fault, not the magazine's. The only way you'll become an expert is by checking your typing and checking it properly. This means checking every single character! I do it all the time and think nothing of it, but then, that's how I became an "expert".

- Garry Francis

POLYGON PLOTTER

by Jamie Athas

Not so long ago, I found a program for the Apple which draws shapes according to your inputs. I just had to convert it to ATARI BASIC. The program ended up completely different to the Apple version, apart from the formulas. I also added a neat TRAP routine.

Here are a few sample inputs for you to try! Circle - 70,7. Square - 4,100. Triangle - 3,100. Hexagon - 6,70. Octagon - 8,65. Pentagon - 5,80.

```
1 REM #####
2 REM # POLYGON PLOTTER #
3 REM # by Jamie Athas #
4 REM # Published by Atari Computer #
5 REM # Enthusiasts (N.S.W.) #
6 REM # October 1983 #
7 REM #####
10 PI=3.14159265
20 GRAPHICS 0:POKE 710,0
30 ? :? :POKE 764,255
40 TRAP 40:?"HOW MANY SIDES";:INPUT N
50 TRAP 50:?"SIDE LENGTH";:INPUT L
60 K=2*PI/N:R=0
70 GRAPHICS 8+16:POKE 710,0:COLOR 1
80 X=120:Y=80:PLOT X,Y
90 TRAP 200
100 FOR I=1 TO N
110 X=X+L*SIN(R)
120 Y=Y+L*COS(R)
130 DRAWTO X,Y
140 R=R+K
150 NEXT I
160 FOR WAIT=1 TO 1000:NEXT WAIT
170 GRAPHICS 8+32:POKE 710,0:POKE 752,
1:? :? " PRESS ANY KEY TO CONTINUE
":POKE 764,255
180 IF PEEK(764)=255 THEN 180
190 RUN
200 GRAPHICS 0:POKE 710,0:?" :? :? "YOU
R LENGTH WAS TOO LONG FOR THE NUM
BER OF SIDES REQUESTED!":GOTO 30
```

ELECTRONIC POKER

by Peter Egan

[This program utilises the ATARI keyboard controller. This is a hand-sized controller with 12 buttons – somewhat like a calculator – which plugs into the front ports. It is available at most places selling the ATARI 2600 Video Computer System. Ask for Part No. CX50. You get two controllers in the one box...GF]

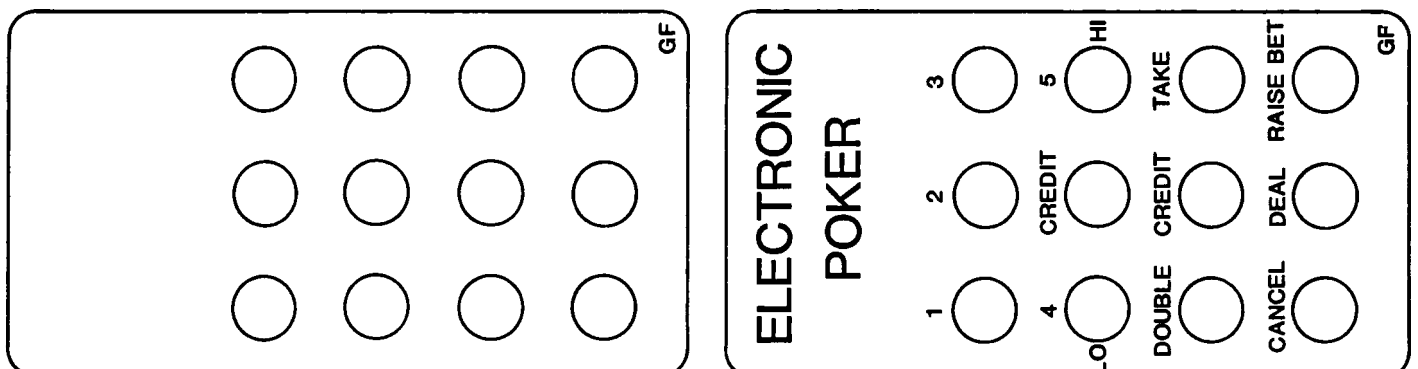
Electronic Poker is my adaptation of the arcade/bar machine. When the program is run, a "coin" must be "inserted" into the machine. This is done by pressing either of the CREDIT buttons on the keyboard controller (refer to the diagram). The player must then RAISE BET from 1 to 20 times the winnings – provided he has enough credits to cover it. He may then press the DEAL button to deal the electronic cards. Any cards that he wishes to keep are "held" by pressing the relevant button (cards are numbered 1–5 from left to right). If a mistake is made when raising a bet or holding cards, the CANCEL button will reset the bet or cards as appropriate. Once satisfied, the DEAL button is again pressed to replace unwanted cards.

If a hand is won, the type of win is pointed to, showing the number of credits won. The player then has the option of TAKEing the winnings or attempting to DOUBLE the winnings. If a double is attempted, the player must select HI or LO, i.e. above or below 7. One card will be dealt and if the attempt is successful, the winnings are doubled and the player is again granted the option of attempting to double. If the attempt to double fails, the winnings for that hand are lost.

[The diagram I've provided is designed to be used as an overlay for the keyboard controller. You can use it straight from the magazine, but you'd be better off if you took a photocopy. Carefully cut out the 12 holes with a sharp blade or a hole punch, then cut around the outside edge. Cut it out so that the black lines are removed otherwise it will be too tight a fit. Using the overlay will certainly make this excellent program easier to use.

Peter's program uses a keyboard controller utility which is set up at lines 20000–20080. These lines may be appended to any of your own programs and initialised with a GOSUB 20000. You can renumber it, of course. Once initialised, the keyboard controllers in Ports 1 and 2 can easily be read by PEEKing locations 1650 and 1651 respectively. The top left key will return a value of 2 when pressed. The top middle key will return a value of 3 and so on down to the bottom right key which returns a value of 13. When no key is pressed, the value will be 15. After a key has been pressed, you must clear location 1650 or 1651 by POKEing it with 15.

You should be aware of two drawbacks when using this utility. Firstly, it uses page 6 of memory, so your own program can't use this area. Secondly, it seems to play havoc with any subsequent disk operations. Pressing SYSTEM RESET before a disk operation will overcome this...GF]



```

1 REM #####
2 REM # ELECTRONIC POKER #
3 REM # by Peter Egan #
4 REM # Published by Atari Computer #
5 REM # Enthusiasts (N.S.W.) #
6 REM # October 1983 #
7 REM #####
10 GRAPHICS 0:POKE 752,1:?:GOSUB 500:
POKE 756,CHR/256:GOSUB 20000
20 DIM AC(9),C(20),R(20),H(5),CRD(13),
CK(12,3),C$(4),R$(26),S$(8)
22 RESTORE :FOR I=1 TO 4:READ A:C$(I)=
CHR$(A):NEXT I
24 DATA 39,135,135,39
26 FOR I=1 TO 26:READ A:R$(I)=CHR$(A):
NEXT I
28 DATA 97,32,10,32,19,32,20,32,21,32,
22,32,23,32,24,32,25,32,17,16,106,32,1
13,32,107,32
30 FOR I=1 TO 8:READ A:S$(I)=CHR$(A):N
EXT I
32 DATA 136,137,10,11,140,141,14,15
34 FOR I=1 TO 5:H(I)=0:NEXT I
36 FOR I=1 TO 9:READ A:AC(I)=A:NEXT I
38 DATA 500,100,25,10,7,5,3,2,1
40 ? CHR$(125):GOSUB 700:POKE 82,20:PO
SITION 20,0
50 ? "Royal Flush":? "Straight Flush":
? "4 of a kind":? "Full House":? "Flus
h":? "Straight":? "3 of a kind"
60 ? "2 pairs":? "Aces or better":POKE
82,0
70 BT=1:CRT=0:BET=0:DL=0
80 FOR I=1 TO 9:POSITION 34,I-1:?"
";
90 POSITION 39-LEN(STR$(AC(I)*BT)),I-1
:?:AC(I)*BT:NEXT I
95 POSITION 3,2:?"CREDIT":POSITION 5,
4:?"BET":IF CRT THEN CT=1
100 POSITION 14-LEN(STR$(BET)),4:?" "
;BET;"":POSITION 14-LEN(STR$(CRT)),2:
?" " ;CRT;" "
105 POKE 1650,15
110 P=PEEK(1650):GOSUB 760:IF P=15 THE
N 110
120 POKE 1650,15:N=0:POKE 77,0
130 IF (P=6 OR P=9) AND CT=0 THEN CRT=
CRT+1:GOSUB 720:CT=1:GOSUB 750:GOTO 10
0
140 IF P=13 AND CRT AND BET<20 THEN DE
T=BET+1:CRT=CRT-1:BT=BET:GOSUB 750:GOT
O 80
150 IF P=11 THEN CRT=CRT+BET:BET=0:BT=
1:GOSUB 750:GOTO 80
160 IF P<>12 OR BET=0 THEN 110
165 GOSUB 750:POSITION 1,12:?" "
";GOSUB 700
170 POP :FOR I=0 TO 12:FOR J=0 TO 3:CK
(I,J)=0:NEXT J:NEXT I
175 POP :FOR I=1 TO 20

```

```

180 C(I)=INT(RND(0)*13):R(I)=INT(RND(0
)*4)
190 IF I=1 THEN 210
200 IF CK(C(I),R(I))=1 THEN 180
210 CK(C(I),R(I))=1
230 NEXT I
240 FOR I=1 TO 5:SOUND 0,255/I,10,9
245 IF R(I)=1 OR R(I)=3 THEN 280
250 POSITION (I-1)*4+21,9:?:CHR$(ASC(R
$(C(I)*2+1))+128);CHR$(ASC(R$(C(I)*2+2
))+128);
260 IF C(I)<>9 THEN POSITION (I-1)*4+2
1,10:?:CHR$(ASC(R$(C(I)*2+2))+128);CHR
$(ASC(R$(C(I)*2+1))+128);:GOTO 300
265 POSITION (I-1)*4+21,10:?:CHR$(ASC(
R$(C(I)*2+1))+128);CHR$(ASC(R$(C(I)*2+
2))+128);
270 GOTO 300
280 POSITION (I-1)*4+21,9:?:R$(C(I)*2+
1,C(I)*2+2);
290 IF C(I)<>9 THEN POSITION (I-1)*4+2
1,10:?:R$(C(I)*2+2,C(I)*2+2);R$(C(I)*2
+1,C(I)*2+1);:GOTO 300
295 POSITION (I-1)*4+21,10:?:R$(C(I)*2
+1,C(I)*2+2);
300 POSITION (I-1)*4+1,10:?:S$(R(I)*2+
1,R(I)*2+2);
305 IF RT THEN RT=0:SOUND 0,0,0,0:RETU
RN
310 NEXT I:SOUND 0,0,0,0:IF DL THEN DL
=0:GOTO 400
315 POKE 1650,15
320 P=PEEK(1650):GOSUB 780:IF P=15 THE
N 320
325 POKE 1650,15
330 IF P=11 THEN FOR I=1 TO 5:H(I)=0:N
EXT I:GOSUB 750:POSITION 20,11:?" "
";GOSUB 710:GOTO 320
335 IF P=12 THEN GOSUB 750:GOTO 355
340 IF P>7 OR P=6 THEN 320
345 GOSUB 750:IF P=7 THEN H(5)=1:POSIT
ION (P-2)*4+16,11:?"h1d":GOTO 320
350 H(P-1)=1:POSITION (P-1)*4+16,11:?"
h1d":GOTO 320
355 POSITION 1,12:?" "
"
360 FOR I=1 TO 5:IF H(I) THEN 370
365 C(I)=C(I+5):R(I)=R(I+5)
370 NEXT I:DL=1:POSITION 20,11:?" "
";GOTO 240
400 FOR I=1 TO 13:CRD(I)=0:NEXT I
405 FOR I=1 TO 5:H(I)=0:CRD(C(I)+1)=CR
D(C(I)+1)+1:NEXT I
410 M=R(1):IF CRD(1)=1 THEN FOR I=2 TO
5:IF R(I)=M AND CRD(I+8)=1 THEN NEXT
I:I=1:GOTO 800
420 FOR J=0 TO 8:IF CRD(J+1)<>1 THEN N
EXT J:GOTO 430
422 IF CRD(1)=1 AND CRD(2)=0 THEN J=8
425 IF CRD(1)=1 THEN FOR I=2 TO 5:IF R

```

```

(I)=M AND CRD(J+I)=1 THEN NEXT I:I=2:G
OTO 800
427 FOR I=1 TO 5:IF R(I)=M AND CRD(J+I
)=1 THEN NEXT I:I=2:GOTO 800
430 FOR I=1 TO 13:IF CRD(I)=4 THEN I=3
:GOTO 800
435 NEXT I:CR1=0:CR2=0
440 FOR I=1 TO 13:IF CRD(I)=2 THEN CR2
=1:IF CR1 THEN I=4:GOTO 800
445 IF CRD(I)=3 THEN CR1=1:IF CR2 THEN
I=4:GOTO 800
450 NEXT I
455 FOR I=1 TO 5:IF R(I)=M THEN NEXT I
:I=5:GOTO 800
460 FOR J=0 TO 8:IF CRD(J+1)<>1 THEN N
EXT J:GOTO 470
462 IF CRD(1)=1 AND CRD(2)=0 THEN J=8
465 IF CRD(1)=1 THEN FOR I=2 TO 5:IF C
RD(J+I)=1 THEN NEXT I:I=6:GOTO 800
467 FOR I=1 TO 5:IF CRD(J+I)=1 THEN NE
XT I:I=6:GOTO 800
470 FOR I=1 TO 13:IF CRD(I)=3 THEN I=7
:GOTO 800
475 NEXT I:CR1=0
480 FOR I=1 TO 13:IF CRD(I)=2 THEN CR1
=CR1+1:IF CR1=2 THEN I=8:GOTO 800
485 NEXT I
490 IF CRD(1)=2 THEN I=9:GOTO 800
495 BET=0:BT=1:CT=0:POKE 1650,15:GOTO
95
500 POKE 559,0:POKE 16,0:POKE 53774,0
510 DL=PEEK(560)+256*PEEK(561)
520 FOR I=DL+14 TO DL+20:POKE I,6:NEXT
I
530 POKE DL+16,7:POKE DL+21,65:POKE DL
+22,PEEK(560):POKE DL+23,PEEK(561)
540 SETCOLOR 0,0,15:SETCOLOR 1,0,0:SET
COLOR 2,0,8:SETCOLOR 3,3,6:SETCOLOR 4,
0,8
550 POKE 559,34
600 CHR=(PEEK(106)-8)*256:IF PEEK(CHR+
13)<>0 THEN RETURN
605 POSITION 4,9:? "initialising"
610 FOR I=0 TO 1023:POKE CHR+I,PEEK(57
344+I):NEXT I
620 DATA 81,2,82,69,90,67,124
625 RESTORE 620
630 J=0:FOR D=1 TO 7:READ A:FOR I=0 TO
7:POKE CHR+1*8+J,PEEK(57344+A*8+I):J=
J+1:NEXT I:NEXT D
640 DATA 64,80,96,123
650 J=0:FOR D=1 TO 4:READ A
655 FOR I=0 TO 7:M=PEEK(57344+A*8+I)
670 N=INT(M/16):M=(M-N*16)*16
675 POKE CHR+8*8+J,N:POKE CHR+9*8+J,M
680 J=J+1:NEXT I:J=J+8:NEXT D
690 RETURN
700 POKE 82,0:POSITION 0,9:? "###!##
!##!##!##";FOR I=1 TO 15:? C$;NEX
T I:? "X##8Z##8Z##8Z##8Z##8"

```

```

710 FOR J=0 TO 4:POSITION J*4+22,11:?
J+1:NEXT J
720 RETURN
750 FOR K=0 TO 9 STEP 2:SOUND 0,P+31,1
0,K/2+10:NEXT K:SOUND 0,0,0:POKE 165
0,15:RETURN
760 CNT=cnt+1:IF CNT/15=INT(CNT/15) TH
EN IF CNT=30 THEN CNT=0
765 IF CNT<16 THEN IF CT=0 THEN POSITI
ON 4,12:? "insert coin":RETURN
767 IF CNT<16 THEN IF CT AND CRT THEN
POSITION 4,12:? "raise bet ":RETURN
770 IF BET<>0 AND CNT>15 THEN POSITION
4,12:? "press deal ":RETURN
775 POSITION 4,12:? " " "":RETU
RN
780 CNT=cnt+1:IF CNT/15=INT(CNT/15) TH
EN FLH=cnt:IF FLH=30 THEN FLH=0:cnt=0
785 IF FLH=15 THEN POSITION 1,12:? "pr
ess hold or deal":RETURN
790 POSITION 1,12:? " "":RETURN
800 GOSUB 1250:RC=AC(I)*BET
805 IF BET=0 THEN CT=1:CT=0:GOTO 95
810 AD=1:SND=255/(AC(I)*BET):IF RC/10=
INT(RC/10) AND RC>90 THEN AD=10
815 FOR J=AC(I)*BET TO 1 STEP -AD:SOUN
D 0,SND*J,10,10
820 CRT=CRT+AD:POSITION 14-LEN(STR$(CR
T)),2:? " ":CRT
825 RC=RC-AD:POSITION 38-LEN(STR$(RC))
,I-1:? " ":RC:NEXT J:SOUND 0,0,0,0
830 GOTO 495
1250 P=PEEK(1650):GOSUB 1300:IF P<>10
AND P<>0 THEN 1250
1252 IF P=10 THEN GOSUB 750
1255 IF P=10 THEN POSITION 18,I-1:? "
":POSITION 3,12:? " "":R
ETURN
1260 IF P<>0 THEN 1250
1265 GOSUB 750:GOSUB 1350
1270 POSITION 34,I-1:? " "":
1275 POSITION 39-LEN(STR$(AC(I)*BET)),
I-1:? AC(I)*BET
1280 IF BET=0 THEN P=10:GOTO 1255
1285 GOTO 1250
1300 CNT=cnt+1:IF CNT/4=INT(CNT/4) THE
N FLH=cnt:IF FLH>14 THEN FLH=0:cnt=0
1305 IF FLH=0 THEN POSITION 3,12:? "
":POSITION 18,I-1:? " "":
RETURN
1310 POSITION 18,I-1:? "=>";
1315 POSITION 3,12:? "take OR double"
1320 RETURN
1350 POSITION 18,I-1:? " "":POSITION
0,9
1355 ? "### " "":FOR I=1
TO 3:? C$;" "":NEXT I:
? "%## " "
1360 POSITION 3,12:? "high OR low "

```

```

1365 P=PEEK(1650):IF P<5 AND P<7 THE
N 1365
1370 GOSUB 750:N=N+1
1375 RT=1:C(1)=C(10+N):R(1)=R(10+N):K=
I:GOSUB 240:I=K:IF P=7 THEN POSITION 5
,10:?"big "
1377 IF P=5 THEN POSITION 5,10:?"smal
1"
1380 IF C(1)=6 OR (C(1)<6 AND P=7) OR
(C(1)>6 AND P=5) THEN DET=0:POKE 1650,
15:RETURN
1385 DET=DET*2:RETURN
1395 RETURN
19999 REM MAIN PROGRAM
20000 RESTORE 20010:FOR I=1536 TO 1648
:READ A:POKE I,A:NEXT I
20010 DATA 174,112,6,189,103,6,141,0,2
11,160,10,136,208,253,174,112,6,185,11
3,2,201,10,144,7,189,107,6,170,24,144
20020 DATA 38,185,112,2,201,10,144,7,1
89,107,6,170,24,144,15,192,2,208,1,136
,185,132,2,208,21,189,107,6,170,232
20030 DATA 232,232,232,192,0,240,6,142
,115,6,24,144,12,142,114,6,192,0,208,5
,160,2,24,144,185,238,112,6,173,112,6
20040 DATA 201,4,48,5,169,0,141,112,6,
76,98,228,221,187,119,238,0,3,6,9,0,0
20049 REM INITIALISER
20050 FOR I=1660 TO 1690:READ A:POKE I
,A:NEXT I
20060 DATA 169,48,141,2,211,169,255,14
1,0,211,169,52,141,2,211,169,211,141,0
,211,104,160,0,162,6,169,7,76,92,228
20070 DATA 96
20080 X=USR(1660):RETURN

```

POEMS

An Operating System of late
Has a bug which I certainly hate
On accessing the drive
It decides to "take five"
And is still fast asleep to this date

Young Henry would fiddle and faddle
With input from joystick in battle
His responsive machine
Wanted more than sixteen
So he ended up creek without "paddle"

Old Oscar could not take the brunt
When playing that game Eastern Front
He chased all their tanks
But they wiped out his flanks
Wasn't Oscar a silly old ____

A lass of delightful proportion
Did programming with every precaution
Although never married
She added and carried
And ON ERROR GOSUB ABORTION

- G. Chapman

ATARI DOODLER

by Geoff Ashworth

Here is a simple program which draws on a GRAPHICS 0 screen with the aid of a joystick plugged into Port 1. The symbols can easily be changed around to create different patterns. The background changes colour to reflect the position of the joystick. To clear the screen, just press the fire button.

```

1 REM #####
2 REM # ATARI DOODLER #
3 REM # by Geoff Ashworth #
4 REM # Published by Atari Computer #
5 REM # Enthusiasts (N.S.W.) #
6 REM # October 1983 #
7 REM #####
10 POKE 82,0:GRAPHICS 0
20 S=STICK(0):SETCOLOR 2,S,0
30 IF S=14 THEN PRINT CHR$(28);CHR$(30
);CHR$(96);
40 IF S=13 THEN PRINT CHR$(29);CHR$(30
);CHR$(20);

```

```

50 IF S=7 THEN PRINT CHR$(19);
60 IF S=11 THEN PRINT CHR$(30);CHR$(30
);CHR$(12);
70 IF S=6 THEN PRINT CHR$(28);CHR$(8);
80 IF S=10 THEN PRINT CHR$(28);CHR$(30
);CHR$(30);CHR$(16);
90 IF S=5 THEN PRINT CHR$(29);CHR$(17)
;
100 IF S=9 THEN PRINT CHR$(29);CHR$(30
);CHR$(30);CHR$(25);
110 IF STRIG(0)=0 THEN PRINT CHR$(125)
;
120 GOTO 20

```

BOOK REVIEWS

ATARI BASIC

by Richard Haskell (Prentice-Hall) \$21.75

Reviewed by A. Dinallo

ATARI BASIC by Richard Haskell is another of the growing number of excellent books dedicated to the ATARI. This book in particular is suitable for beginners, as it assumes you have no prior knowledge of computers or programming - it even illustrates how to switch on the computer.

The style of the book is "type as you learn" with plenty of examples and an abundance of screen photos. These two techniques certainly make learning a pleasant experience.

The chapters include a tour of the computer, initiating the reader with BASIC, showing how to print, plot, use colours, sounds, graphics, flowcharts, the game ports, etc. Each chapter uses the knowledge learned in the previous one until you reach the final chapter titled "Learning to Put it All Together", in which you combine all you have learnt to create a series of programs.

There are also programs using techniques which may be of interest to the more experienced. These include making bar graphs, playing cards (setting up a deck, shuffling, sorting, dealing), plotting waveforms in high resolution graphics, redefining characters, using disks to store and sort sequential files, etc. - all using the knowledge gained from reading previous chapters.

Finally, the book contains appendices with ATASCII codes, a summary of BASIC commands, reserved words, error messages, etc. ATARI BASIC is well suited to the owner of an ATARI who needs to further his confidence and knowledge of using BASIC.

* * *

THE CREATIVE ATARI

Edited by David and Sandy Small and George Blank

(Creative Computing Press) \$25.95

Reviewed by A. Dinallo

Creative Computing was amongst the first of the computer magazines to publish a series of articles about the ATARI computer. A few of the "oldies" who purchased an ATARI when they were first available in Australia may remember the series of fine tutorials by David and Sandy Small and the even earlier "OUTPOST: ATARI" column edited by George Blank. At a time when information about the capabilities of the ATARI computer were only available to those who acquired a preliminary copy of "De Re Atari", these articles proved a godsend.

David and Sandy Small and George Blank have now put together a pot-pourri of articles from Creative Computing over the past three years [including the numerous bugs and printing errors of the original articles...GFI]. This "scrap-book" is for the benefit of newcomers who would like to get the most out of their machine. The layout of the book is an easy to understand and often humorous collection of programs, software and hardware reviews, hardware projects, languages and modems. There are the Smalls' tutorials on graphics, display lists, character sets and player-missile graphics, as well as tips, techniques, ideas, aids and demos. There is also a chapter devoted to the disk drive.

The Creative Atari is a fine book providing an invaluable source of material for the user and is highly recommended.



NEWS

In the last issue, I previewed the new XL series of ATARI computers. Recent newspaper and magazine articles have announced "official" release of these products in Australia. In actual fact, they are not even in the country yet! Robert Kidd and David Glenmere of Futuretronics came to our September meeting to clarify the situation. The 600XL will hopefully be ready by November for \$399. The 800XL may come later for \$599. Note that these are NTSC machines which will be modified for PAL operation by Futuretronics themselves. ATARI doesn't seem to think that the overseas market is worth worrying about. At this time, it seems unlikely that we will get the 1400XL or 1450XLD. However, rumours are rife that a very powerful machine called either the 1600 or the ABM (for ATARI Business Machine) will be released around christmas or new year. The rumoured capabilities of this machine are phenomenal. I am swamped with other rumours, but I'll keep you in suspense until I know something more definite. On the software front, Paint, LOGO, AtariWriter, Donkey Kong and much more are now available.

* * *

Back in August, Futuretronics-Indelec Pty. Ltd. invited me to Newcastle to represent ATARI users at the launching of the ATARI in the northern regions of N.S.W. During the 2 day promotion I played with the new 600XL (a beautiful machine in every respect), helped Martin (their technician) to start a local users' group and met several of our country members. Overall, the promotion was very well received. I was quite impressed with the way they handled things - they could certainly teach Futuretronics in Melbourne a thing or two! My thanks to John Bender, Sue Lightfoot and the others for making me feel so welcome.

* * *

The Annual General Meeting is on 7th November, 1983. The idea of the A.G.M. is to elect a new committee for 1984. You don't have to stand for office, but please come along and vote for the new committee. The official proceedings will be kept short and the normal interesting stuff will follow.

* * *

We're having a christmas get-together at The Rocks on Friday 9th December, 1983 (probably Ye Olde Spaghetti Factory or Phillip's Foote). Bring your family and friends for a great night out. Full details at future meetings or give someone on the committee a ring. Note that the normal meeting will still be on Monday 5th December.

* * *

There will be no meeting in January, 1984.

* * *

So you think you're a pretty crash hot programmer? Well whether you are or not, here's an opportunity to put your programming skills to work for the benefit of all. We are having a programming contest for educational software. The rules are simple:

1. You must be an A.C.E. member.
2. The program must be educational in nature.
3. The program must be entirely your own work.
4. The program must be submitted on disk or cassette together with any relevant documentation to reach us by the meeting on 6th February, 1984.

To be fair, judging will be by committee members who have not submitted an entry themselves. There will be a 1st prize of \$100, a 2nd prize of \$50 and maybe some consolation prizes as well. The winning entries may be printed in a future issue of INSIDE INFO. In addition, if the winning entries are of commercial quality, they may be considered by Ashton

Scholastic for commercial release. This is a golden opportunity. You don't have to be a good programmer, but give it a go. If you have problems, there are plenty of members who can help you. We've given you plenty of warning, so get to it.

* * *

Don't forget that we also have an annual award of \$100 worth of software for the author of the best article in INSIDE INFO. Any article from Issue No.7 to Issue No.12 will be eligible for the current award. Last year's winner (your humble Editor) put the money towards Miner 2049'er, Shamus and Fort Apocalypse.

* * *

I must apologise that the information page promised previously has not come to fruition. I thought that compiling the information would be a snack, but it has proved to be a formidable task. Maybe next issue...

* * *

Disk #4 is now available from the Software Exchange at the usual price of \$10. This disk is chock full! It includes all 42 BASIC programs and 4 assembly language listings from Issue Nos. 1-6 of INSIDE INFO. All the prize winning GTIA demos are there as well as games, utilities and more. This one's too good to miss!

* * *

Finally, some good news and some bad news. First the bad news. Our old supply of blank disks has sold out. Now the good news. Our new supply is cheaper! A box of 10 blank disks (from Computer Resources Company) is \$28.00 plus postage. Available by mail or from John Massara at meetings. Incidentally, if you ever have any trouble with our blank disks or cassettes, please let us know.

* * *

Ashton Scholastic has eventually released the Wizware range of software. These follow a learning through fun philosophy and are really well done. Initial releases are Microzine (48k disk), Square Pairs (16k cassette), Turtle Tracks (32k disk) and Bank Street Writer (32k disk). The latter is available only to teachers and schools. Broderbund distributes the consumer version.

* * *

Does anyone read the computer pages in Monday's Sydney Morning Herald? I am constantly irritated by the trash they churn out, but when they belittle the ATARI or refer to it as a "games machine", I feel like screaming! For example, "...Atari tinkered with relatively unsophisticated machines designed in 1977 and 1978...". Relatively unsophisticated? You've gotta be joking! Despite its age, the ATARI is still the most sophisticated home computer on the market (and that includes the crummy, bug-ridden, hardware incompatible Commodore 64).

* * *

Remember "Buyers Beware" in last issue? I thought you may be interested in a follow up. On 1st August, 1983 the Sydney Morning Herald published an article about a computer retailer who was being investigated by Victorian Government authorities for allegedly failing to deliver goods to customers. The Victorian Consumer Affairs Bureau had received about 20 complaints in two months. It also found about \$50,000 worth of Country Court judgements against the company. The Fraud Squad had raided the shop and confiscated steel-tipped bullets and the company's books. The company wasn't named, but we have been assured that it was none other than Computer Country.

So why wasn't something done earlier? A leading computer magazine in Australia told us that "We can't even discuss the company in question, as it has threatened us with legal action on two occasions in the past and our insurers tell us it is better not to discuss its activities at all."

Our member has since been contacted by the C.I.D. Fraud Squad of the Victorian Police who are investigating the matter. They would like to contact anyone who had trouble with Computer Country. If you had trouble, contact Detective Sergeant Alan S. Adair, Corporate Affairs Office, G.P.O. Box 4567, Melbourne, Vic. 3001 and tell him which of the following categories you come under:

- (a) money sent, but goods never received
- (b) not all goods were received
- (c) goods received were faulty
- (d) faulty goods were sent to Computer Country for repair, but never returned

It turns out that one of Computer Country's practices was to advertise repair services and when someone sent in faulty goods, they were immediately shipped to someone else who had ordered new goods. The person ordering the new goods would obviously return them when they didn't work and the cycle would be repeated. I can never recall a company stooping to such blatant deceit in all my days!

* * *
LETTERS

Al Hewson writes:

"I would like to see A.C.E. conduct a 10 week W.E.A. course for ATARI computers. A.C.E. members would bring their hardware and tutor 2 or 3 students. Each lesson would be 3/4 hour games illustration, 3/4 hour lecture and 1/2 hour tutorial. This would enable a wide section of the public to participate in our favourite gear. W.E.A. courses cost \$37 per student."

A noble suggestion, but the subject of courses was brought up before and not one single member was interested. Here's a second chance (although you don't deserve it) to contact us if interested in any aspect of ATARI programming courses.

* * *

Al is also looking for self contained or share accomodation near the city. If you can help out, ring him on 634-5360 and leave a message.

* * *

Philip Brown writes:

"I would like to see some articles on P-M graphics and on character definition and a couple of simple programs to illustrate these. Something on inserting text on the graphics screen and custom display lists would also be quite helpful."

With respect to character definition, see INSIDE INFO No.2 and No.5. With respect to text on a GRAPHICS 8 screen, see INSIDE INFO No.2 and this issue. Back issues are available for \$4 each from the secretary. Custom display lists and P-M graphics have been included in several programs, but not given tutorial coverage. Articles anyone?

* * *

Also from Philip Brown, here is a variation on the digital clock program by Geoff Ashworth (INSIDE INFO No.8). Simply insert the following lines to make it work as an alarm clock!

```
9 GRAPHICS 0:INPUT A,B,C
```

```
165 IF I=A AND M=B AND S=C THEN SOUND 1,135,0,14:SOUND 2,130,0,14
```

When the input prompt appears, enter the time you want the alarm to go off (including seconds), then set the time as usual. When the alarm time is reached, the computer will make a sound.

* * *

QUESTIONS AND ANSWERS

Q: I wish to seek your advice on two problems I have with a program I am currently working on. The first problem is with an update loop in GRAPHICS 8. After each cycle, it prints new information in the text window. How do I stop the "flickering" that occurs? The second problem also deals with GRAPHICS 8. How do you clear off some of the lines without clearing the whole screen? Please help!

Geoff Ashworth

A: With respect to the first question, you must understand the limitations of using a text window. I thought this would be a subject of interest to most readers, so I've devoted a whole article to it elsewhere in this issue. You'll find your answer there. With respect to the second question, there are numerous ways to clear restricted portions of the screen, but some are a bit tricky. The easiest and most straightforward way is probably something like this (imagine you wanted to clear lines 10-20 in GRAPHICS 8):

```
100 COLOR 0
```

```
110 FOR Y=10 TO 20
```

```
120 PLOT 0,Y:DRAWTO 319,Y
```

```
130 NEXT Y
```

* * *

FOR SALE

ATARI 822 thermal printer complete with manual, power pack, connecting cable (does not require 850 Interface Module) and screen dump software. Excellent condition. \$250 Contact Anthony Dinallo 662-7777 Ext 63 during business hours.

FILES AND SORTS

by Peter Dickeson

A file is a repository of information made up of units called records. Each record in a file holds the same type of information as every other record. Here are some examples of files.

- A very simple file is represented by a dictionary. The records in this file each consist of a word followed by a description which may include a pronunciation guide and the origin of the word. The records are in alphabetical order.
- The telephone book. Each record contains name, address and telephone number. This time, the records are ordered by name.
- A computer file used to update bank accounts. Each record contains account number and type, date, transaction name, amount and a credit or debit indicator (deposit or withdrawal sign). The records are not in any order.

Each item of information in a record is called a field. For instance, each record in the telephone book has three fields - name, address and telephone number. Fields can be renamed, e.g. address can be broken down into two fields - street and suburb.

The records of a file may be ordered or unordered. To order the records of a file, you need to sort them. The fastest way to sort records is to place them in RAM and sort them there. You need to know three things: (a) where the records are in RAM, (b) a sort algorithm, and (c) a key to sort on.

The sort key is a field, or several fields or the whole record, which is used as a basis for ordering the records. Using the dictionary as an example, the key is the field called word. The field called description is not used as part of the key. The telephone directory has name as the sort key. The computer file has no key as it is unordered. If I want the file to be sorted, I might use a key of account number and type, but I think it more likely that I would also use date. Thus, for every account there would be any number of transactions in date order. This is known as sorting by date within account. This is confusing. It is better to say that the principal key is account and the secondary key is date.

An algorithm is a set of rules to give a precise result using a machine such as a computer. In fact, there is a computer language called ALGOL meaning ALGO^rithmic Language. There are many sort algorithms and I will give you some of them.

For convenience, I will use the following notation:

N=number of records

R=record, R(1)=first record, R(N)=Nth record

K=key of record, K(1)=key of first record, K(N)=key of Nth record

TR=temporary storage of one record

TK=key of record in temporary storage

The algorithms are described in an ALGOL-like language with the BASIC equivalent following in a couple of cases. Note that there are no line numbers and a block of code is bounded by a BEGIN...END group, which makes the code equivalent to one statement. Statements are separated by semi-colons. The computer language Pascal is similar.

Algorithm 1: Straight Insertion Sort

```
FOR J := 2 UNTIL N DO
BEGIN
  TR := R(J); I := J-1;
  WHILE I > 0 AND K(I) > TK DO
  BEGIN
    R(I+1) := R(I); I := I-1
  END;
  R(I+1) := TR
END
```

```
10 FOR J=2 TO N
20 TR$=R$((J-1)*L+1,J*L)
30 REM L = length of record
40 I=J-1
50 IF I>0 AND K(I)>TK THEN R$(I*L+1,
I*L+L)=R$((I-1)*L+1,I*L):I=I-1:GOTO
50
60 R$(I*L+1,I*L+L)=TR$
70 NEXT J
```

Note that $K(I)$ is the key of the I th record of R . In the BASIC version, it is therefore a substring of $R\$((I-1)*L+1, I*L)$. The time taken for the sort is (on average) proportional to N^2 . On average there are $N^2/4$ (approx.) comparisons and moves.

Algorithm 2: Bubble Sort or Ripple Sort

<pre> FOR J := 1 UNTIL N-1 DO FOR I := 1 UNTIL N-J DO IF K(I) > K(I+1) THEN BEGIN TR := R(I); R(I) := R(I+1); R(I+1) := TR END </pre>	<pre> 10 FOR J=1 TO N-1 20 FOR I=1 TO N-J 30 IF K(I)>K(I+1) THEN TR\$=R\$((I-1)*L+1, I*L):R\$((I-1)*L+1, I*L)=R\$(I*L+1, I*L+L):R \$(I*L+1, I*L+L)=TR\$ 40 NEXT I 50 NEXT J </pre>
--	---

As for algorithm 1, the time is proportional to N^2 , but note that the actual times are much longer than those shown for algorithm 1. Worst case is $N(N-1)/2$ comparisons and $3N(N-1)/2$ moves. Average is $N^2/2$ comparisons and $3N^2/4$ moves.

Algorithm 3: Modified Bubble Sort

```

M := N-1;
WHILE M <> 0 DO
  BEGIN J := M; M := 0;
    FOR I := 1 UNTIL J DO
      IF K(I) > K(I+1) THEN
        BEGIN TR := R(I);
          R(I) := R(I+1); R(I+1) := TR; M := I-1
        END
      END
    END
  END

```

Compared with algorithm 2, the number of comparisons is reduced, but the algorithm still takes about twice as long as algorithm 1.

Algorithm 4: Shell's Sort (Diminishing Increment Sort)

```

WHILE H > 0 DO
  BEGIN
    FOR L := 1 UNTIL H DO
      FOR J := L STEP H UNTIL N DO
        BEGIN
          WHILE I >= L AND K(I) > TK DO
            BEGIN
              R(I+H) := R(I); I := I - H
            END;
          R(I+H) := TR
        END;
      H := (H-1) / 3
    END
  END

```

This algorithm effectively carries out a sequence of insertion sorts over subfiles of the complete file. The subfiles contain elements of intervals of H in the complete file. The final value of H must be 1 so that the final phase is a straight insertion sort. Timing is proportional to $N^{1.3}$. The sort may be used for N such that $1000 \leq N < 10000$. A suggested H sequence taken from "The Art of Computer Programming, Vol.3 - Sorting and Searching" by D.E. Knuth is $H = ((3^K - 1)/2, \dots, 4, 1)$ with K chosen such that $((3^{K+2} - 1)/2) > N$. For example, where $N=1000$ then $H=121$.

ALL ABOUT TEXT WINDOWS

by Garry Francis

The text window at the bottom of GRAPHICS 2 to 8 consists of 4 lines of GRAPHICS 0, therefore nearly all the rules of printing in GRAPHICS 0 are equally applicable to printing in the text window. For example, whenever you print something, the cursor automatically jumps down to the next line. This is referred to as a "carriage return" (a term acquired from the similar action of a typewriter). To see what I mean, run the following program and take note of where the cursor sits. It should be below the word "TEST".

```
10 GRAPHICS 8
20 PRINT "TEST"
30 GOTO 30
```

If you print on the bottom line of the text window, then the poor old cursor has nowhere to go, so the text window is scrolled up and the top line is lost. The following example illustrates this. Instead of "LINE 1" being at the top, it is scrolled off into never-never land and "LINE 2" takes its place. The cursor sits on the bottom line below "LINE 4".

```
10 GRAPHICS 8
20 PRINT "LINE 1"
30 PRINT "LINE 2"
40 PRINT "LINE 3"
50 PRINT "LINE 4"
60 GOTO 60
```

Fortunately, we can suppress the carriage return by placing a semi-colon at the end of whatever we wish to print. For example, modify line 50 of the last example and again take note of where the cursor sits. This time, "LINE 1" is at the top and the cursor sits at the end of "LINE 4".

```
50 PRINT "LINE 4";
```

RULE #1: In order to prevent the text window from scrolling, always suppress the carriage return when printing on the bottom line.

Notice also that the cursor does not sit on the last character printed, but always advances to the next print position. If we print something on the last column of a line (i.e. column 39), then the cursor will advance to the first position in the next line. The following example illustrates this.

```
10 GRAPHICS 8
20 FOR I=2 TO 39
30 PRINT "A";
40 NEXT I
50 GOTO 50
```

Can you guess what will happen when you print in the last column of the last line? Once again, the text window will scroll to make room for the cursor and the top line will be lost.

```
10 GRAPHICS 8
20 PRINT "LINE 1"
30 PRINT "LINE 2"
40 PRINT "LINE 3"
50 FOR I=2 TO 39
60 PRINT "A";
70 NEXT I
80 GOTO 80
```

RULE #2: In order to prevent the text window from scrolling, do not print in the last column of the last line.

So far, so good. Now let's move the cursor around. We'll begin by clearing the text window and moving the cursor to the home position (i.e. the top left corner). This is easily done by printing the clear screen character. This looks like a little bent arrow and is obtained by pressing ESC, then SHIFT-CLEAR or CTRL-CLEAR. Unfortunately, this does not print on my

printer, so I will use CHR\$(125) instead. They both do the same thing.

```
10 GRAPHICS 8
20 X=0
30 PRINT CHR$(125);X
40 X=X+1
50 FOR I=1 TO 200:NEXT I
60 GOTO 30
```

Note that PRINT CHR\$(125) clears only the text window and does not affect the upper portion of the GRAPHICS 8 screen, whereas PRINT #6; CHR\$(125) would clear everything.

RULE #3: To clear the text window and home the cursor, use PRINT CHR\$(125).

In the last example, you may have noticed a disturbing flickering effect as the cursor jumped around. Here is a little trick to eliminate the flickering and prevent the appearance of the cursor from spoiling your display. You can make the cursor invisible with POKE 752,1 but it will not actually become invisible until after you print something. You can make it visible again with POKE 752,0 but similarly, it will not actually become visible until you print something. Note that the cursor is always made visible after a GRAPHICS statement, so if you wish to make it invisible, you will have to use POKE 752,1 after each GRAPHICS statement.

```
10 GRAPHICS 8
20 POKE 752,1:PRINT CHR$(125);"INVISIBLE"
30 FOR I=1 TO 500:NEXT I
40 POKE 752,0:PRINT CHR$(125);"VISIBLE"
50 FOR I=1 TO 500:NEXT I
60 GOTO 20
```

RULE #4: To make the cursor visible, use POKE 752,0. To make the cursor invisible, use POKE 752,1.

Unfortunately we can't use the position statement in the text window, but there is a simple alternative. The Operating System keeps track of the position of the text cursor at memory locations 656-658. You can change the position of the cursor by simply POKEing the new position into these locations. Location 656 contains the cursor row (0-3) and location 657 contains the cursor column (0-39). Location 658 is actually not used and should always be zero. The following example should give you an idea of how this works. Note that once again, the cursor does not actually move until something is printed.

```
10 GRAPHICS 8:POKE 752,1
20 PRINT "ELAPSED TIME:"
30 PRINT
40 PRINT "      SCORE:"
50 A=0:B=0
60 POKE 656,0:POKE 657,16:PRINT A
70 POKE 656,2:POKE 657,16:PRINT B
80 A=A+1:B=B+INT(RND(1)+0.5)
90 GOTO 60
```

RULE #5: To set the row of the cursor, use POKE 656,X where X is 0-3. To set the column of the cursor, use POKE 657,Y where Y is 0-39.

Finally, you can change the left and right margins of the text window the same as with GRAPHICS 0. Use POKE 82,LM to change the left margin (where LM is 0-39 and the default is 2) and use POKE 83,RM to change the right margin (where RM is also 0-39, but it should be greater than or equal to LM and the default is 39). Note that the POKE does not have any effect until something has been printed or the cursor is otherwise relocated. Pressing SYSTEM RESET resets the margins to their default values, but the GRAPHICS statement does not affect them.

RULE #6: Use POKE 82,LM to change the left margin and POKE 83,RM to change the right margin where LM and RM are 0-39.

S-T-R-E-T-C-H YOUR DISPLAY

by Roberto Romano

[The flexibility of the ATARI display list allows you to have any of 17 different graphics modes intermixed in any way you choose. This article demonstrates not only how to mix graphics modes, but also how to increase the number of scan lines in the playfield to more than 192. It is presented for interest only. You can use this technique in your own personal programs, but do not use it for commercial programs, magazine articles or any programs sent to INSIDE INFO! When you "break the rules" as this program does, you'll start to run into trouble. It works on PAL systems because we have a faster (3MHz) CPU. It may not work on NTSC systems...GF]

Owning a PAL TV set (as we all do in Australia) can have both advantages and disadvantages when we hook it up to a computer. A disadvantage is that the proportion of the useable screen area is less than that of the American NTSC system.

When you switch on your ATARI, you see two large black bands -- one at the top of the screen and one at the bottom. This is to prevent overscanning (where part of the picture would not be seen). These black bands are much wider on our PAL systems than on the American NTSC systems. This is because the PAL screen has a higher number of scan lines -- 625 instead of 525. The ATARI does not use "interlacing", so only half of the lines are used per TV frame. (By the way, the picture is wider than it is high by the ratio of 4:3.)

The normal ATARI display lists are 192 scan lines, so you can see that a great deal of the screen appears unused. Other microcomputers seem to have a larger useable screen area, but most of them do this by "camouflaging" the top and bottom black bands with the same colour as the centre of the screen. The area actually available for display remains more or less the same as for the ATARI. On my TV set (Philips), the useable screen area is about 75%. The rest is all black -- a bit of a waste. Fortunately, the ATARI provides us with a display list to play with and manipulate at will. Now get ready to type in this program and put 240 scan lines on the screen. That's a full GRAPHICS 24 plus 2 lines of GRAPHICS 2 and 2 lines of GRAPHICS 1 for a big text window. If your screen can't hold it all, please let me know.

The program is written in block form:

- a) initialise strings (lines 10-20)
- b) set up a modified GRAPHICS 24 display (lines 30- 50)
- c) set up machine language routine (line 60)
- d) display text on GRAPHICS 24 screen (line 70)
- e) draw Moire patterns on screen (lines 80- 150)
- f) set up "text window" (line 160)
- g) scroll text (lines 170-200)

Basically, we want a GRAPHICS 24 display with a big text window at the bottom. We'll dress up the display by adding text to the GRAPHICS 24 display and make the text in the window move from right to left. A way of putting text in GRAPHICS 24 is by modifying the display list (see also INSIDE INFO No.2 August 1982 for another method), but that doesn't allow text and graphics on the same line. A better way is to plot the text as GRAPHICS 24 points using a machine language subroutine (see the article by D. Crockford in COMPUTE!'s First Book of ATARI Graphics). It allows half-line spacings which is very useful in algebra. The data for this routine starts at line 210. The arguments of the USR routine in line 70 are the X and Y positions of the cursor and the address and length of the string to be displayed.

Now to increase the number of useable scan lines, we first eliminate the 24 blank lines at the top of the display list (these are the three 112's) by adjusting the pointer to the start of the display list. Then comes the GRAPHICS 24 display, the changes for the text window and finally, we close with a Jump and wait for Vertical Blank (JVB) instruction, i.e. POKE DL+200,65. [The observant reader may notice that there is now more instructions than in the original display list. This is possible because there are normally 16 unused bytes at the

end of a GRAPHICS 24 display list. Modifying GRAPHICS 0-6 and 16-22 in this way is more difficult, as they do not have any unused bytes...GFJ

For the display in the text window, we bring down the location of the top of the screen to DM+7680, where DM is the pointer to the start of Display Memory and 7680 comes from 192x40 bytes/line. [Similar to above, this is possible because there are 160 unused bytes following the GRAPHICS 24 display memory. This applies to any graphics mode without a text window...GFJ

For the moving message in the window, we use a method similar to one given by Martell and Murdock in COMPUTE!'s First Book of ATARI. The POKE 87,1 tells the computer we are in GRAPHICS 1. POKE 87,2 (for GRAPHICS 2) would also work, as these are both text modes requiring the same number of bytes per line.

That does it -- 240 scan lines and a bigger screen! Try and use some other graphics modes and move them around. If you come up with some unusual effects I'd be happy to know about them.

```

1 REM #####
2 REM # S-T-R-E-T-C-H #
3 REM # by Roberto Romano #
4 REM # Published by Atari Computer #
5 REM # Enthusiasts (N.S.W.) #
6 REM # October 1983 #
7 REM #####
10 DIM A$(1),X$(80),P$(167):X$=" ":X$(
80)=" ":X$(2)=X$
20 X$(1,13)="MOIRE PATTERN":X$(21,33)=
"moire pattern":X$(41,53)="MOIRE PATTE
RN":X$(61,73)="moire pattern"
30 GRAPHICS 24:POKE 559,0:SETCOLOR 2,0
,0:SETCOLOR 4,0,14
40 DL=PEEK(560)+256*PEEK(561)+3:HI=INT
(DL/256):LO=DL-256*HI:POKE 560,LO:POKE
561,HI:POKE DL+196,7:POKE DL+197,7
50 POKE DL+198,6:POKE DL+199,6:POKE DL
+200,65:POKE DL+201,LO:POKE DL+202,HI:
POKE 559,34
60 FOR I=1 TO 167:READ A:P$(I)=CHR$(A)
:NEXT I:M=ADR(P$)
70 A=USR(M,3,11,ADR("Moire"),5):A=USR(
M,31,11,ADR("Pattern"),7)
80 FOR I=0 TO 102 STEP 2:COLOR 1:PLOT
159,0:DRAWTO I,191:PLOT 159,0:DRAWTO 3
19-I,191
90 COLOR 0:PLOT 159,0:DRAWTO 318-I,191
:PLOT 159,0:DRAWTO I+1,191
100 COLOR 1:PLOT 159,191:DRAWTO 319-I,
0:PLOT 159,191:DRAWTO I,0
110 COLOR 0:PLOT 159,191:DRAWTO I+1,0:
PLOT 159,191:DRAWTO 318-I,0:NEXT I
120 FOR I=0 TO 102 STEP 2:COLOR 1:PLOT
0,90:DRAWTO I,0:COLOR 0:PLOT 0,90:DRA
WTO I+1,0:NEXT I
130 FOR I=217 TO 318 STEP 2:COLOR 1:PL
OT 319,90:DRAWTO I,191:COLOR 0:PLOT 31
9,90:DRAWTO I+1,191:NEXT I
140 FOR I=0 TO 102 STEP 2:COLOR 1:PLOT
0,90:DRAWTO I,191:COLOR 0:PLOT 0,90:D
RAWTO I+1,191:NEXT I
150 FOR I=217 TO 318 STEP 2:COLOR 1:PL
OT 319,90:DRAWTO I,0:COLOR 0:PLOT 319,
90:DRAWTO I+1,0:NEXT I
160 DM=PEEK(88)+256*PEEK(89)+7680:HI=I
NT(DM/256):LO=DM-256*HI:POKE 88,LO:POK
E 89,HI:POKE 87,1
170 A$=X$:X$=X$(2):X$(80)=A$
180 POSITION 0,0:? #6;X$;
190 FOR W=1 TO 20:NEXT W
200 GOTO 170
210 DATA 104,201,4,240,9,170
220 DATA 240,5,104,104,202,208
230 DATA 251,96,104,133,215,104
240 DATA 133,214,104,104,168,104
250 DATA 133,217,104,133,216,104
260 DATA 104,240,236,133,212,24
270 DATA 165,214,101,88,133,214
280 DATA 165,89,101,215,133,215
290 DATA 152,240,15,165,214,105
300 DATA 64,133,214,165,215,105
310 DATA 1,133,215,136,208,241
320 DATA 132,221,160,0,132,220
330 DATA 177,216,160,0,170,16
340 DATA 1,136,132,213,138,41
350 DATA 96,208,4,169,64,16
360 DATA 14,201,32,208,4,169
370 DATA 0,16,6,201,64,208
380 DATA 2,169,32,133,218,138
390 DATA 41,31,5,218,133,218
400 DATA 169,0,162,3,6,218
410 DATA 42,202,208,250,109,244
420 DATA 2,133,219,164,221,177
430 DATA 218,69,213,164,220,145
440 DATA 214,200,132,220,196,212
450 DATA 208,182,24,165,214,105
460 DATA 40,133,214,144,2,230
470 DATA 215,230,221,169,8,197
480 DATA 221,208,159,96,207,96

```

SOFTWARE REVIEWS

KICKBACK

by Thorn EMI (Cartridge)

Reviewed by Sean Quinlan

This game is not very exciting and will definitely not keep you "glued to the screen until you can once again beat the high score" as the catalogue promises.

You control a small man in the bottom third of the screen. This man can move up, down, left or right and will "kick" a ball towards the top of the screen if he touches it. The object of the game is to score points by deflecting the ball to hit the players in the middle of the screen. When the ball hits a player, it is deflected back towards the bottom of the screen and sometimes that player disappears.

You lose men by allowing the ball to pass you and go into your goal. The game ends when all your men are gone or when your time runs out. Extra time is given when you score a goal, but that's about all that happens.

There is some sound, but it's only a short beep when the ball hits anything or goes in a goal. There are five levels, but I could not see much difference between them. There is also a two player mode.

All in all, I think you should give this game a miss.

* * *

SUPER CUBES AND SLIP

by THORN EMI (16k cassette)

Reviewed by Andrew Jones

Super Cubes is the Rubik's Cube done on the computer. As far as computer cubes go, this one isn't too bad. As well as the standard 3x3 cube, you can have a 2x2 or 4x4 cube. You then select how much you want the cube to be jumbled up and this can take a few minutes on the harder levels. As you rearrange the cube with your joystick, a stopwatch is on the screen and when the cube is finally fixed, a message such as "good" or "excellent" is displayed. Unfinished games can be saved on tape.

Slip is a computer version of a hand-held maze where you have to tilt the balls into the holes. The game is absolutely terrible and has bad graphics. It often locks up during or between games. It must have been written to fill the B side of the Super Cubes tape as it has practically no entertainment value.

* * *

EUROPEAN SCENE JIGSAW PUZZLES Vol.1

by THORN EMI (16k cassette)

Reviewed by Andrew Jones

These are fairly interesting jigsaw puzzles on the computer. This tape has two puzzles -- The Arc de Triomphe and The Colosseum. They have good graphics and the tune at the start is also pretty good. The size of the puzzles can be changed from 25 pieces to 64 pieces. Movement of the pieces is done with a joystick and is quite hard to understand at first. The worst thing about the puzzles is that they give a terrible rasping noise when you do something wrong. This comes from the keyboard speaker and sounds like the one on CLOAD or CSAVE. Unfortunately, it can't be turned off.

CREATE INSTANT DIRECTORIES

by Garry Francis

Imagine that you've just typed a program into the computer and you want to save it on disk with the name MYPROG.BAS, but you're not sure whether you've used that name before. What do you do?

Imagine that you've just finished debugging a program and you want to ENTER a co-resident renumbering utility, but you can't remember which disk it's on. What do you do?

These are just two of the many situations where you need to go to DOS to get a disk directory, but if you do, you'll lose the program in memory. There are several solutions to this problem, but none of them are really adequate. The directory programs in Issue Nos. 5 and 7 are no help. I've given the problem some thought and come up with the following solution. It requires no extra memory, it can be used with any program in memory, it does not append unwanted lines to the program in memory, it does not require you to go to DOS, it does not need MEM.SAV and it uses up only one sector of your valuable disk space. Sound too good to be true? Read on.

Type in the program given below making sure you enter A\$ exactly as shown. The program is called CREATE because, when run, it will create a file called DIR. I chose this name as it is short for directory and hence easy to remember. You can call it something else if you like.

So how does it work? DIR is a one line BASIC program without any line number. It is saved to disk in LIST (i.e. untokenised) format. When you type ENTER "D:DIR", it will be entered into memory and executed immediately - just as though you had typed it in direct mode.

So all you need to do is use CREATE to put a copy of DIR on each of your working disks. Alternatively, you can use CREATE the first time and use Option J (Duplicate File) from DOS for subsequent copies. Whenever you want a disk directory, just insert the disk (it must have DIR on it), type E:"D:DIR and a directory will be printed on the screen. If there's a lot of entries in the directory, use CTRL-L to prevent them scrolling off the screen.

Note that the directory will be terminated by ERROR 136 which simply indicates that the end of the directory has been reached. IOCB #1 will be left open after the directory is printed, so you may need to close it by typing END or CLOSE #1 - a small price to pay when you consider the other advantages.

```
1 REM #####
2 REM #      CREATE      #
3 REM #      by Garry Francis      #
4 REM # Published by Atari Computer #
5 REM #   Enthusiasts (N.S.W.)    #
6 REM #      October 1983         #
7 REM #####
10 DIM A$(86):A$="POKE82,2:POKE83,39:G
R.0:CLR:DIMF$(17):CL.#1:O.#1,6,0,'D:x.
x':F,I=1TO64:I.#1,F$?:F$N,I"
20 A$(54,54)=CHR$(34):A$(60,60)=CHR$(3
4):OPEN #1,8,0,"D:DIR"? #1:A$:CLOSE #
1:END
```



"Wow! The centerfold this month is the new IBM Triplex 304!"

BULLETIN BOARD REPORT

by Roberto Romano

This is the first of a series of regular reports on data communication activities within and outside A.C.E.(N.S.W.). The Bulletin Board Service, from now on abbreviated as BBS, is at an advanced stage of implementation. [Roberto is an extreme optimist -- GF] We now have nearly all the necessary hardware -- except the modem! We hope to have one soon. This hardware was very kindly lent to us by Futuretronics through the help of Peter Carr, their Sales Manager. Peter has given us strong support through his interest in communications and allowed Garry Francis, Tony Reeve and myself to test our terminal software and use their equipment on their premises. Carl has also given us a hand during our "practice sessions". Again a big thanks to Peter and Carl! We also have lots of communications software. Although not all properly tested at this stage, it certainly will be in the near future. We will have some of those programs available for downloading (receiving) by members. Here is a tentative list of items offered on the menu when you log on to our system:

- HELP -- On how to use the system
- HOT LINE -- On your programming troubles
- DAILY NOTICES -- Club meetings, etc.
- ADVERTISEMENTS -- From members and dealers
- LIST OF PROGRAMS available for downloading:
 - Terminal software
 - Games
 - Programs from INSIDE INFO
 - Utilities
 - Other

We strongly urge you to let us know what your views are on the BBS and what you would like to see on it. You will of course be encouraged to send us (upload) any of your programs for inclusion on the menu or for articles in INSIDE INFO. (This can make things much easier for all concerned.) Melbourne A.C.E. claims to already have a BBS running through The Australian Beginning, which is a time-sharing system offering such goodies as Telex communications and low costs. Costs are \$4.50 per hour after 6 P.M. on weekdays and all day Saturday and Sunday. You can join The Australian Beginning and avail yourself of their services for only \$5.00 -- a special offer for members. Contact me for details.

Our BBS will be independent, that is, members will only pay a nominal fee to join and can stay on line as long as they like (within certain limits of course) for the cost of a 'phone call. Initially we will be offering the BBS for only 2 hours a night and as the number of users increase, so will the time.

Well then, if you live at Palm Beach and would like to play chess with your friend in Cronulla, but don't want to travel that far, the BBS is for you. If you're too lazy or can't afford the time to type in those nice LONG Public Domain programs, then you might find that you can get them on disk or tape without much effort through our BBS. Finally, if you want to be part of the communications boom and open up new frontiers to your ATARI, then the BBS is for you.

That's all fine, but what do I need to make a connection to the BBS? Basically, a computer (Ha!), a disk drive or cassette recorder (optional), an 850 interface (depending on your modem), a modem (a must) and terminal software to "connect" you. Two types of modems are currently available -- an acoustic coupler, which is a device with two rubber/foam cups that receive your telephone handset, and a direct connect modem which is connected directly to the phone line via a plug/connector. The acoustic coupler can be used "as is" but for the direct connect you must contact Telecom for the special connection to the phone line.

Here are some prices and brand names:
Acoustic coupler -- Sendata \$199

Direct connect modem -- Cicada 300 \$229, Dick Smith \$199, World Modem \$600,
International Modem \$600

Note: the last two enable you to ring any place in the world. All the others are suitable for Australia only. The Cicada 300 is regularly sold for \$229 but we can get it for about \$160 by ordering 30 or more. [Sendata has just released a new direct connect modem called the Sendata 300 for \$240 and we may be able to do a similar deal on it...GF]

I don't want to go on for too long so I'll close by asking all members who have some sort of interest in data communications to let us know by 'phone/letter or in person at the meetings so we can plan the BBS more effectively.

Roberto Romano
P.O. Box 183,
Edgecliff, N.S.W. 2027
(02) 327-4898

* * *

MULTICOLOUR GTIA DEMO

by Peter Douglas

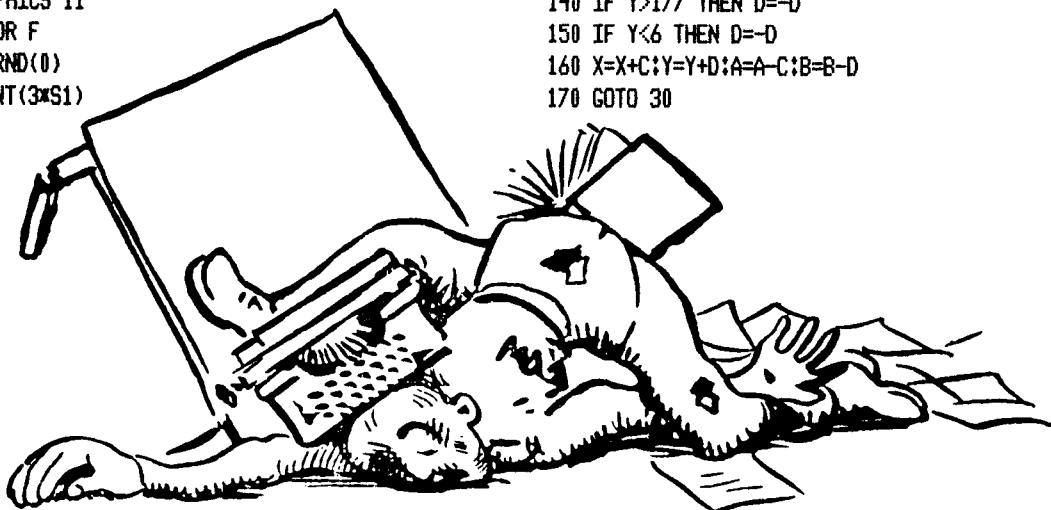
Here is a simple little program which may excite some of our members. A friend of mine wrote it, so I can't claim any credit for it, but I thought it was good enough to share around.

The D=2 in line 10 has the effect of drawing every second horizontal line each time through and it gives an optical effect of 225 colours (i.e. 15 colours overlayed on 15 colours - not counting the black background). [This principle was discussed in some detail by Alan J. Zett in SoftSide #39 page 71...GF]

If you change line 70 to read ...THEN F=F+1, it will quickly cycle through the colours whenever the fire button is pressed. As it is, the fire button changes the colour to black and "paints" over the colours to start again or create patterns.

By the way, I previously didn't know (and therefore others probably don't know) that CTRL-1 can be used to stop and start this sort of graphics display. Anyway, I hope you like it.

```
1 REM #####
2 REM #   MULTICOLOUR GTIA DEMO   #
3 REM #   by Peter Douglas' friend #
4 REM # Published by Atari Computer #
5 REM #   Enthusiasts (N.S.W.)    #
6 REM #       October 1983        #
7 REM #####
10 F=4:C=1:D=2:X=4:Y=6:A=75:B=177
20 GRAPHICS 11
30 COLOR F
40 S1=RND(0)
50 S=INT(3*S1)
60 IF S=1 THEN F=F+1:POKE 77,0
70 IF STRIG(0)=0 THEN F=0
80 IF F>15 THEN F=0
90 PLOT X,Y:DRAWTO A,Y
100 DRAWTO A,B:DRAWTO X,B
110 DRAWTO X,Y
120 IF X>75 THEN C=-C
130 IF X<3 THEN C=-C
140 IF Y>177 THEN D=-D
150 IF Y<6 THEN D=-D
160 X=X+C:Y=Y+D:A=A-C:B=B-D
170 GOTO 30
```



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